
Research on human embryos – a justification

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Author's abstract

The philosophical debate surrounding the moral status of the embryo has reached the public arena. The author of this paper examines some of the common arguments against embryo experimentation, including an influential article by Professor Ian Kennedy. He concludes that these arguments do not succeed in demonstrating that the intentional creation of embryos for research purposes is wrong, unless they also succeed in demonstrating that contemporary liberal abortion laws are also wrong. The author also criticises the conclusions of the Warnock Report, and suggests that the reasons for permitting embryo research must be given a wider public audience.

The public debate surrounding the legality of experimentation on human embryos is rapidly reaching a critical phase. Enoch Powell's attempt to ban virtually all embryo experimentation with his Unborn Children (Protection) Bill was rejected by Parliament, but it seems very likely that this type of research will soon be regulated in law. It is vital, both in the interest of medical research and the legal process, that a full public debate be held, and it is the experience of the author that the reasons for permitting embryo experimentation have not been given as full a public airing as they might, for there is indeed a good case to be made. Edwards (1) points out several benefits that may arise if the necessary research is carried out. Perhaps the most obvious is the improvement in the methods used to alleviate infertility, for despite the fascination of the press with *in vitro* fertilisation, its overall success rate remains low. Further, Edwards believes that the success of identifying embryos with inherited gene defects would improve, and that greater understanding of the causes of chromosomal aberrations would lead to abnormal embryos being identified at an earlier stage than is now possible, preventing the need for mid-term abortions and their trauma for mother and nursing staff alike.

Key words

Embryo experimentation; brain death; personhood definitions; abortion; *in vitro* fertilisation and embryo experimentation.

Perhaps Edwards's most radical suggestion is that these studies might lead to the grafting of cells and tissues from post-implantation embryos into adults, to cure a number of diseases, especially those affecting the brain and myocardium.

It would seem that the scientists conducting this research see its potential benefits as very great indeed, but this is in itself not enough for it to be permitted. Arguably, the benefits of allowing research followed by destruction of fully developed human beings would be equally great, but no one suggests it be permitted. In medical research the ends may not justify the means, and we must show why, in allowing embryo research the means themselves are morally justified. That is, it is not enough to show that experimentation on human embryos will be of great benefit, but the nature of the research, regardless of its outcomes, must be shown to be morally permissible.

The questions surrounding the moral status of the embryo and hence the ethics of its treatment have been discussed in philosophical publications for many years, and yet these various arguments had, until recently, rarely made their way into the wider public arena. However, the case suggesting the immorality of research on human embryos was argued publicly by Professor Ian Kennedy in a lengthy article published in *The Times* (2). I shall examine his and other arguments opposing embryo research, and show why the conclusion that 'research on embryos is never morally permissible' is unjustified. Since Kennedy's article is succinct and has also had the wide publicity afforded by *The Times*, I shall use it as my central focus.

Before I examine these arguments, I must first clear up the use of certain key terms. I shall use the word 'person' to mean any being, human or otherwise, which has sufficient mental function to render its deliberate destruction intrinsically wrong, whereas the term 'human being' shall refer to any being which is a member of the species *Homo Sapiens*, without regard to the nature of its mental life. As we shall see, the two terms are often used synonymously, which causes a great deal of confusion.

Kennedy presents as his starting point the need to establish a time when humanness first appears. It seems clear that for Kennedy, the term 'human' serves the same function as my term 'person', in so far as the

organism thus described has a right to continued existence once it first shows the relevant signs of 'humanness'. Kennedy then outlines but rejects the steps involved in the so-called argument from symmetry. Now it is clear that Kennedy finds this argument lacking, since his call to ban the creation of 'spare' embryos goes further than the arguments from symmetry would conclude. However, we must examine the validity of the argument from symmetry, for its conclusions lead to the banning of experimentation after the embryo has aged a limited number of weeks. Explaining the argument Kennedy writes, 'If we accept, as relevant criteria for determining death, the irreversible absence of pulse and respiration and the capacity for consciousness and sentience, then it could be said that there is an element of symmetry, and that it is rationally defensible to use the first appearance of these faculties as the beginning of humanness'. On this basis, research would be limited to about eight weeks, after which brain life might be said to have begun, albeit of a limited nature (3).

This argument, propounded by Goldenring among others, and in a somewhat more complicated form by Brody (4), is, *in essence*, an appeal to the moral relevance of species membership; that is to say, since all beings with the right to continued existence are sentient, respire, and so on, (for if they failed to show these signs they would be dead,) an embryo, as soon as it shows these signs, is a member of the human species and *by virtue of this alone*, is entitled to continued existence. However, the foundation of this argument is severely shaken when we examine some counter examples.

Firstly, consider the case of a being from another planet, a 'Martian', who exhibited all those higher mental functions we normally associate with personhood, for example, the capacity to reason logically, to communicate, to have desires over time, to appreciate beauty, and so on. Now it would seem that the deliberate and arbitrary killing of this being was wrong, regardless of its non-humanity, to exactly the same degree as would be a similarly arbitrary and deliberate killing of any human person. Next I shall consider a human being with brain damage such that the neurological basis of consciousness, memory, logical thinking, and all the higher functions which are commonly associated with the special characteristics distinguishing people from animals have been irreparably destroyed, but whose brain stem is left sufficiently intact for all basic bodily functions such as breathing, circulation of the blood, and so on, to be carried out. I would suggest that killing such a being, while it undoubtedly takes a human life, does not violate any *person's* right to life (5). (This suggestion reflects a moral intuition, not of course the law, which would classify such a killing as murder). The destruction of a human being is surely not morally wrong because the human has brain-stem function, but because he has characteristics of personhood. The

symmetry argument fails because brain-stem death is a *sign* by which we can be as certain as possible that those functions necessary for specifically person-making characteristics have been irreparably destroyed, that is to say, the *person* is dead. However, while brain-stem death is sufficient for us to consider the human person as dead, it is not necessary. Consider the vegetative state, where there is no brain-stem death, but the features of personhood are irretrievably lost; while experience is theoretically possible during vegetative-state 'sleep-wake' cycles, without higher brain function such experience must necessarily be considered less content-full than, for instance, the experience of fully developed lower mammals. The vegetative-state human being is dead as a person even if *legally* speaking he or she is alive; the function of the human brain stem is not sufficient for life of the human person. Brain-stem life is a necessary but not sufficient condition for human personhood (6). Of course, if it were sufficient, as we shall see in the last section, abortion after the development of the brain stem would be as morally unacceptable as experimentation on embryos.

However, even if the above difference between the death of a person and brain stem-death be admitted, it may be suggested that this is irrelevant, since society, as reflected through the legal process, accepts only loss of brain-stem activity as the arbiter of the definition of death, and hence from the symmetry argument its activity indicates sufficient life to merit legal protection against being killed. There are however, two objections that may be raised; first, that a definition of death as reflected in legal decision does not make it immune from a new precedent being based on reasoned argument and scientific evidence. Second, and perhaps more important, society already does distinguish morally and legally between live human bodies and human persons. A fetus is a live human; it may be killed to benefit others; a person may not. A more subtle and contentious distinction is between severely handicapped newborn babies whom many would 'allow to die' by treating with sedatives and feeding on demand only, whereas they would not treat adults with the same severe handicap in the same way. If however, a human being has a full claim not to be killed and to medical protection by virtue of pulse, respiration and those other signs of brain-stem life suggested earlier, then no moral argument can be sustained that will allow us to differentiate morally between handicapped babies and handicapped adults, or between handicapped babies and normal babies, so far as 'allowing to die' is concerned. Social acceptance of abortion and the differential treatment of the handicapped newborn suggests that many are aware of the difference between live human beings and persons, and that society too recognises that certain human beings, by virtue of the fact that they are not fully 'persons', need not be given full protection under the law against being killed or deliberately 'allowed to die'.

Before I attempt to resolve the questions of

personhood that are central to the problem of the moral status of the fetus, some might argue that personhood definitions are useless in that they simply smuggle into the specific definition of personhood precisely those moral conclusions desired. This, however, is not a problem specific to the question of personhood; the same may be said when we try to define the concept of a 'right', the term 'justice', and so on. Indeed the maxim 'he who defines the terms wins the argument' is not without some foundation. This should not prevent us unduly from attempting to tackle the problem of personhood, and indeed it is because the concept of 'personhood' is now such a diffuse one that its resolution is all the more pressing.

A fully comprehensive analysis of personhood is beyond the scope of this paper. However, a working definition is required by the medical profession, and it is possible to outline one which is not based on the argument from symmetry, or the argument from potential, which we shall later consider. The list of those properties or characteristics which make something a person is seemingly endless. Some which have been suggested include the capacity for having desires; the ability to solve problems; an awareness of the passing of time, and so on. Perhaps the specifically person-making properties have been best summed up by John Locke, who defined a person as '... a thinking intelligent being, that has reason and reflection, and can consider itself as itself, the same thinking thing, in different times and places; which it does only by that consciousness which is inseparable from thinking, and, as it seems to me, essential to it: it being impossible for any one to perceive without perceiving that he does perceive' (7). If such a view of the characteristics of personhood is accepted, then the evidence available suggests that an embryo, or fetus for that matter, does not have the nervous system capable of sustaining those functions which are the basis of personhood (8). Indeed it is not until some months after birth that we can be sure such higher mental function, indicative of personhood, is present. Hence, the claim that the embryo is a person would fail if this Lockean view were accepted, for the neurological basis of sufficient mental function is not completed until some time after birth, and is certainly absent in the fetus or embryo.

Some may wish to base a definition of personhood on pulse, respiration, sentience, and so on, without regard to the criteria suggested above, and this argument may succeed, but at the cost of extending the definition of personhood to most mammals, and certainly those we eat and use in experiments. Indeed, many animals, such as cattle and monkeys show, in the adult state, a mental life far more complex than the neonate, and certainly one more advanced than the embryo. If the 'brain-stem life' criterion for personhood is accepted, our protection must be extended to virtually all sentient creatures. The fact that we do not extend full moral and legal protection to these sentient creatures suggests that our analysis thus far may reflect a social

rejection of mere brain-stem life as being sufficient for personhood.

The second argument Kennedy discusses is the argument from potential; the basic line of reasoning is that even though the embryo may not yet be a person it has the *potential* to develop into one, and by virtue of this potential must be afforded the same measure of legal protection that is afforded to persons. This argument is open to two criticisms, which show its conclusions either to be false or trivial. Firstly, it is not clear that because X will inevitably occur to A, we are justified in treating A as if X had already occurred. For example, as Harris points out, all human beings will one day die, but we would be quite wrong in treating living human beings as if they were already dead (9).

Secondly, the argument from potential entails the moral imperative 'give the same moral respect to all potential persons that you give to actualised persons'. Now unfertilised eggs and sperms are biologically active and are also – considered jointly – potential persons, albeit further removed from actualisation than an embryo, which is in turn further removed from actualisation than the fetus, and so on. Thus deliberate contraception or for that matter, abstinence from sexual intercourse seems too, to fall foul of the argument from potential. Those who accept that the argument from potential outlaws embryo research should also accept that it outlaws contraception and even deliberate sexual abstinence. Conversely, those who accept contraception and abstinence as being unscathed by the argument from potential have no apparent basis for applying it to embryo research (or abortion for that matter). One counter-argument to this however, is that abortion or embryo experimentation is morally worse than deliberate non-conception because the embryo is a potential person which has already got started. The problem with this is that if it is the end product with which we are concerned, there seems no reason to suppose termination is worse at one stage than another. As Jonathan Glover puts it, 'if it is a cake you are interested in, it is equally a pity if the ingredients were thrown away before being mixed or afterwards' (10). Hence the argument from potential does not seem able to sustain an objection to embryo experimentation.

We shall now turn to the last argument discussed by Kennedy in his article. He writes that '... apart from arguments about potentiality, there is another reason why research on early embryos in the circumstances I have outlined may be said to be morally wrong. This rests on the proposition that there is something special, something commanding moral respect, in human reproductive products'. But what does this respect amount to? In particular, does it require us not to kill embryos (for example after experimenting on them) in the same way that respect for people requires us not to kill people? If so, abortion at any stage is unjustifiable just as the medical killing of any patient is unjustifiable. If not, the next question is what reason could there be to demand greater respect for the early

embryo than the later fetus? Thus, the various requirements of benefit to others are demanded in British abortion legislation on the basis that some degree of respect must be shown to the developing human life. Nonetheless, fetuses up to twenty-eight weeks of development may be 'destroyed for among other reasons, risk to the pregnant mother or harm to any of her existing children greater than if the pregnancy were terminated. However, as abortions must be carried out in properly regulated circumstances, they are outlawed unless they meet the socially determined criteria. That degree of respect is in no way equivalent to the respect we owe persons, but it does prohibit the killing of human fetuses unless benefit to others will result. But *that* degree of respect can perfectly well be extended to embryos without there being any moral imperative forbidding all embryo research, whether on deliberately or fortuitously created spare embryos. Thus provided the genetic 'parents' had sanctioned such research, provided that embryos after research were destroyed, and provided that the proposed research was intended to benefit others and recognised by an appropriate body as offering an adequate prospect of so doing, then the respect accorded to human embryos would be at least as great as that accorded to embryos and fetuses under current British abortion legislation.

Is there, however, as Kennedy argues there is, a moral difference between research done on fortuitously spare embryos and research done on embryos produced specifically for that purpose? It is reasonably clear that the intention with which the embryo was created cannot affect its own moral status: if it could we could end up with a situation in which one embryo could not be used for research because it had been created intentionally for that purpose, whereas a second fortuitously spare embryo could be used for research. Kennedy seems to reject such a distinction when he writes 'these . . . arguments . . . force the conclusion that research on embryos is *never* morally permissible' (emphasis added). Yet earlier in the article he writes that if the spare embryo had not been 'developed with the primary intention of using it for research purposes' ' . . . then *prima facie* there may be no objection in principle to its being used for research . . . it could be said that it is justifiable to take advantage of such a fortuitous occurrence so as to enhance knowledge and improve treatment of others'. Clearly these two claims are mutually inconsistent. In a letter responding to criticism of his article by Edwards and Steptoe, Kennedy indicates that he is not an absolutist against embryo research and does accept that research on some embryos is justified but he rejects entirely the creation of embryos for the primary purpose of doing such research (11).

But what is wrong with intentionally creating embryos for the purpose of research and then destroying the embryo after the research is finished? Kennedy offers two arguments. One is the potentiality argument, and once again it is important to realise this

would apply just as effectively against existing English abortion laws. The other argument offered by Kennedy is that we must not transgress 'a fundamental principle – that we may not use humans as means to an end but must respect them as ends in themselves. This would mean that once the entity was judged to have even the most limited form of humanness it would be entitled to respect and protection from being the object of research'. Once again the argument must work at least as effectively against abortion as it does against embryo research. *If* we are to assume that an embryo is an 'end in itself' then of course we must not experiment on it and then kill it. But if we accept that argument then we certainly must not kill embryos and fetuses in order to benefit their mothers and/or siblings (as permitted under current English abortion legislation). Conversely, those who support our abortion laws must, if they are to be consistent, believe that fetuses and embryos *may* be used solely as means to an end and need not be regarded as ends in themselves.

What about public opinion and 'moral repugnance' at the thought of such experimentation being permitted? Kennedy is perfectly correct when he suggests that when legislating we should take note of public opinion and feeling, but it seems probable firstly, that public feeling is not as clear-cut as many would suggest (12), and secondly that if the public were to realise the inconsistency we have outlined above, and wanted to eliminate it, then rather than forbidding abortions, embryo experimentation would be permitted. Certainly there is no reason to claim that morality is in some way logically dependent on, or connected to what 'the public' feels or thinks. Whilst the two are undoubtedly intertwined, moral decisions must be based on reasoned argument and not simply on 'gut reaction' or emotional outbursts of the nature we have unfortunately witnessed, with researchers being likened to Nazi doctors, and so on.

It is of note that the Warnock Report recommended that after the embryo had aged 14 days, experiments on it should be made illegal (13). Whilst it considered evidence from all sides, it based this recommendation on the observation that each human embryo is a potential human being (13), an argument I have found to be untenable. Moreover, the argument, if accepted, would apply just as strongly to embryos before 14 days development, and yet the members of the committee found no objection to research carried out until the appearance of the primitive streak, the justification of which is, to say the least, puzzling. The committee rightly asserted that questions of when life and personhood begin are 'complex amalgams of factual and moral judgements'; however, without attempting to tackle those questions in any rigorous way, the committee set about answering the question of 'how it is right to treat the human embryo' (14). It seems a pity that a royal commission led by an eminent philosopher should not address itself to a full discussion of the moral status of the embryo, for on this must surely rest any conclusions as to its treatment.

What then, is to be the cut-off point beyond which experimentation on fetuses would be illegal? As I indicated earlier, the neurological basis of personhood is not present until some months after birth: if that is the case, then consistency demands that the time beyond which further experimentation is illegal must similarly be at a time *after* the birth of the infant. Many would claim however, that this would have disastrous consequences, and for this reason, some arbitrary cut off-point must be used to outlaw such work on the neonate. Tooley (15) deals with this problem, but concludes that any undesirable consequences stemming from the legalisation of infanticide (for example the diminished respect for human life and the danger that people will conclude that it is morally permissible to destroy other human beings, such as the elderly and the handicapped) would '... be short term ones, and that they will be significantly outweighed by the positive consequences that will flow from the adoption of sound moral principles in this area' (16). Glover too discusses the consequences of adopting a policy permitting infanticide (in cases where the child born is handicapped to some degree), and observes that it would '... remove the sharp boundary of birth' (17), emphasising the need to stress where any new boundary would lie; he concludes that the benefits of the adoption of infanticide in certain cases outweigh the dangers of this kind of legislation being but the 'thin end of the wedge'. Whilst making this judgement Glover is careful to point out that it is possible to weigh up the different sides of this argument and reach the opposite conclusion, whilst still agreeing on similar basic principles. This author believes that the balance has not yet tipped in favour of those who would advocate the legalisation of experimentation on neonates; the positive consequences of such a policy would not outweigh the dangers such legislation would inevitably bring. Like Glover, it is also my belief that it is possible to accept the arguments I have outlined above and conclude that the benefits of infant experimentation outweigh its dangers. (Whilst Glover addresses the question of infanticide in cases of severe handicap, considerations similar to those he discusses apply when considering permitting experiments on neonates, and the reader is directed to Glover's sensitive thoughts on this problem (18)).

Professor Kennedy correctly suggests that the law must control experimentation on human beings, and he raises justified concern at the way in which many techniques are being used without paying heed to legal or ethical considerations. Before the government decides to ban or otherwise curb embryo experimentation, a full public debate must be held. Human embryo experimentation affords future generations the likelihood of considerable medical benefits. It would be quixotic (and irresponsible) to ban such research on the basis of moral arguments which are inadequately worked out, and which if they were accepted should also result in the repeal of our current abortion laws and in the re-imposition of a

prohibition on contraception.

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References

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- (2) Kennedy I. Let the law take on the test tube. *The Times* 1984 May 26. All further quotations from Kennedy in this paper refer to this article, unless otherwise indicated.
- (3) Flower J. Neuromaturation of the human fetus. *Journal of medicine and philosophy* 10:3. 237–251. The earliest reported electrical brain activity is at 6.5 weeks and hence the 25-day limit based on this criterion alone seems a little too severe.
- (4) Goldenring J M. Development of the fetal brain [letter]. *New England journal of medicine* 307: 564. In his brief letter, Goldenring states the argument from symmetry as the basis that the 'fetus cannot be shown to be anything but a living human being at eight weeks if our definitions are applied consistently'. Goldenring expands his argument in Goldenring J M. The brain life theory; towards a consistent biological definition of humanness. *Journal of medical ethics* 1985; 4: 198–204. See also Brody B. *Abortion and the sanctity of human life: a philosophical view*. Cambridge, Massachusetts: MIT 1975 chs 6 and 7.
- (5) These two examples, along with several others, are to be found in Tooley M. *Abortion and infanticide*. Oxford: Oxford University Press, 1983: 61–77.
- (6) It is not my suggestion here that *natural* brain-stem activity is necessary for personhood. If, at some time in the future, it is possible for a machine to take over brain-stem function, so that with this machine the person is able to have higher brain activity, while without it the brain, and hence the being would be unable to continue living, I would still suggest that brain-stem activity was necessary for personhood.
- (7) Locke J. *An essay concerning human understanding*. Book II ch 27. Reprinted in Perry J, ed. *Personal identity*. Berkely: University of California Press, 1975: 39.
- (8) For a summary of the neurological basis of personhood see reference (5): 347 *et seq*.
- (9) Harris J. *The value of life*. London: Routledge and Kegan Paul, 1985: 11.
- (10) Glover J. *Causing death and saving lives*. Harmondsworth: Penguin Books, 1982: 122.
- (11) Kennedy I. [letter]. *The Times* 1984 Jun 8.
- (12) Moreover, public opinion is not clear. 'The Archbishop of York has declared himself pro-research. A Panorama poll showed 51 per cent in favour of research to eliminate genetic diseases. The Labour conference voted overwhelmingly to deplore the 44 Labour MPs who voted for Powell'. Fletcher M. Warnock: why either way spells trouble. *The Times* 1985 Oct 31.

- (13) *Report of The Committee of Inquiry into Human Fertilisation and Embryology*. London, Her Majesty's Stationery Office, 1984: 66.
(14) See reference (13): 60.

- (15) See reference (5): 412–416.
(16) See reference (5): 416.
(17) See reference (10): 167
(18) See reference (10): ch 12.

Competition in medical ethics: £100 prize

Read the story printed below about Phillip Green.

Answer the question: What are Patricia Green's responsibilities to Phillip Green; are they those of a wife to a husband or of a woman to a stranger?

The answer should be given in a total of 1500–2500 words. Any suitable form for the answer may be used, for example essay, dialogue or case conference.

The judges will give preference to answers in the form of a case conference, in which three answers are given, each from a different perspective. Examples of possible perspectives are those of: Patricia Green; the social worker involved; a philosopher; a lawyer; a doctor; Phillip Green – either before or after his stroke. Any three perspectives may be chosen, whether or not they are on the list above, but it should be stated which perspectives have been chosen.

You may find it helpful to organise a real case conference; but the answers can equally well be from an imaginary conference.

One entry may be the work of any number of people.

Answers will be judged mainly by the quality of the arguments put forward combined with the evidence that they show of the useful contribution to the problem made from different perspectives.

Eligibility

This competition may be of particular interest to students and those in professional training, but it is open to anyone.

Prize

The winning entry will be published in the journal and in addition the winner will receive a cash prize of £100. The judges reserve the right not to award a prize if no entry is of sufficient standard.

Entry

Entrants should send four copies, typed double-spaced, to: The Editor, *Journal of Medical Ethics*, 151 Great Portland Street, London W1N 5PB. The name and address of each contributor to the entry should be given. Entries should arrive by May 15th 1987.

Phillip Green is a 62-year-old British Leyland worker who takes early retirement. He enjoys his retirement, is active and helpful in the home, considerate to his wife, Patricia, and on good terms with his large family. His main hobby is gardening, and over the years, he has won many prizes for his dahlias. In the year after retiring he does particularly well and wins more prizes than ever before.

Phillip and his wife are also keen dancers. On Friday and Saturday nights they go down to the local club, dance and chat. Mr Green is a popular and social man and the couple are well liked.

On Sunday Mr Green and his wife go to morning service at their local Anglican Church. For Sunday lunch they usually visit one of their three children, and particularly like playing with their grandchildren whom they are inclined to spoil.

A year after retiring Mr Green has a stroke which leaves him with a mild left-sided hemiplegia. He is

able to hobble around indoors. His speech is normal.

Following the stroke his character is markedly different. He is morose and introspective. His only activity is to sit and think about the past. He is demanding of his wife, treating her like a servant. He loses interest in his gardening and no longer goes down to the club. When his friends call on him he usually shows little interest in them although occasionally he enjoys talking with them about the past. He finds his grandchildren irritating, and the weekly visits for Sunday lunch have ceased to be a pleasure either for his wife or for his children. All are glad when the time comes for them to depart. He is unaware of the change either in his role or his character.

His wife tells the social worker that she no longer wishes to look after her husband. She says: 'It is like being married to a stranger; it would have been better had he died'.